CLAIMS

We claim:

1. An electromagnetic energy treatment apparatus comprising:

a generator configured to produce electromagnetic energy; and

at least one applicator coupled to said generator,

wherein said applicator is configured to apply said electromagnetic energy; and

a detector disposed on said applicator,

wherein said detector is configured to measure the field strength of the electromagnetic energy applied.

2. The apparatus of claim 1, wherein said detector is a germanium diode signal detector.

3. The apparatus of claim 1, further comprising a light-emitting diode (LED) that flashes when the field strength measured by said detector is greater than a maximum field strength level.

4. The apparatus of claim 1, further comprising a light-emitting diode (LED) that flashes when the field strength measured by said detector is less than a minimum field strength level.

5. The apparatus of claim 1, further comprising at least one amplifier connected to said generator, wherein said amplifier controls the amount of electromagnetic energy transmitted to said applicator.

6. The apparatus of claim 5, further comprising a power level controller configured to control said amplifier.

7. The apparatus of claim 6,

wherein said detector sends feedback information about the field strength measured by said detector to said power level controller, and

wherein said power level controller controls said amplifier in accordance with said feedback information.

8. The apparatus of claim 6, wherein said power level controller turns off said amplifier when the field strength measured by said detector is greater than a maximum field strength level.

9. The apparatus of claim 6, wherein said power level controller turns off said amplifier when the field strength measured by said detector is less than a minimum field strength level.

10. The apparatus of claim 5, further comprising a sensor configured to measure the proximity of the applicator to a patient,

wherein said sensor activates a switch when said applicator is coupled to the patient; and

wherein said amplifier is turned off when said switch is activated.

11. The apparatus of claim 1, wherein said applicator includes a sensor configured to measure the proximity of the applicator to a patient.

12. The apparatus of claim 11, wherein said sensor includes a switch that activates a lamp when said applicator is coupled to the patient.

13. The apparatus of claim 12, wherein said lamp flashes when said applicator is not coupled to the patient.

14. The apparatus of claim 11, wherein said sensor includes a switch that changes the state of an indicator when said applicator is coupled to the patient.

15. The apparatus of claim 11, wherein said sensor includes a switch that changes the state of an indicator when said applicator is not coupled to the patient.

16. The apparatus of claim 1, wherein said generator is battery powered.

17. An electromagnetic energy treatment apparatus comprising:

a generator configured to produce high frequency pulses; and

at least one applicator coupled to said generator,

wherein said applicator is configured to apply said high frequency pulses, and

wherein said applicator includes a detector configured to measure said high frequency pulses applied.

18. The apparatus of claim 17, wherein said detector is a germanium diode signal detector.

19. The apparatus of claim 17, further comprising at least one amplifier connected to said generator, wherein said amplifier controls high frequency pulses transmitted to said applicator.

20. The apparatus of claim 19, further comprising a power level controller configured to control said amplifier.

21. The apparatus of claim 20,

wherein said detector sends feedback information about the high frequency pulses to said power level controller, and

wherein said power level controller controls said amplifier in accordance with said feedback information.

22. The apparatus of claim 19, further comprising a sensor configured to measure the proximity of the applicator to a patient,

wherein said sensor activates a switch when said applicator is coupled to the patient; and

wherein said amplifier is turned off when said switch is activated.

23. The apparatus of claim 17, wherein said applicator includes a sensor configured to measure the proximity of the applicator to a patient.

24. The apparatus of claim 23, wherein said sensor includes a switch that activates a lamp when said applicator is coupled to the patient.

25. The apparatus of claim 24, wherein said lamp flashes when said applicator is not coupled to the patient.

26. The apparatus of claim 23, wherein said sensor includes a switch that changes the state of an indicator when said applicator is coupled to the patient.

27. The apparatus of claim 23, wherein said sensor includes a switch that changes the state of an indicator when said applicator is not coupled to the patient.

28. The apparatus of claim 17, wherein said generator is battery powered.

29. An apparatus for stimulating the proliferation of cells in tissue, the apparatus comprising:

a first circuit configured to produce electromagnetic energy;

an applicator configured to apply said electromagnetic energy produced by said first circuit to the tissue;

a detector configured to:

sense the electromagnetic energy applied by said applicator, and

produce a response signal in response to said sensed electromagnetic energy; and

a second circuit configured to vary the applied electromagnetic energy as a function of said response signal.

30. The apparatus of claim 29, wherein said detector is a germanium diode signal detector.

31. The apparatus of claim 29, wherein said detector is configured to sense the electromagnetic energy applied by said applicator by measuring the field strength of the applied electromagnetic energy.

32. The apparatus of claim 31, wherein said second circuit is configured to vary the applied electromagnetic energy by ceasing to provide said applied electromagnetic energy if the field strength of said applied electromagnetic energy is greater than a maximum field strength level.

33. The apparatus of claim 31, wherein said second circuit is configured to vary the applied electromagnetic energy by ceasing to provide said applied electromagnetic energy if the field strength of said applied electromagnetic energy is less than a minimum field strength level.

34. A method of treating biological cells with electromagnetic energy comprising:

applying electromagnetic energy to the biological cells;

measuring the field strength of the applied electromagnetic energy; and

comparing the field strength to a maximum field strength level and a minimum field strength level.

35. The method of claim 34, further comprising changing the state of an indicator if said field strength is greater than said maximum field strength.

36. The method of claim 34, further comprising changing the state of an indicator if said field strength is less than said minimum field strength.

37. The method of claim 34, further comprising ceasing to apply said electromagnetic energy if said field strength is greater than said maximum field strength.

38. The method of claim 34, further comprising ceasing to apply said electromagnetic energy if said field strength is less than said minimum field strength.

39. A method of treating a patient with electromagnetic energy comprising:

transmitting electromagnetic energy to an applicator;

coupling said applicator to the patient to apply said electromagnetic energy to the patient;

measuring the proximity of said applicator to the patient;

measuring the field strength of the electromagnetic energy applied; and

comparing the field strength to a maximum field strength level and a minimum field strength level.

40. The method of claim 39, wherein said measuring the proximity of said applicator to the patient comprises activating a switch when said applicator is coupled to the patient.

41. The method of claim 40, further comprising ceasing to apply said electromagnetic energy when said switch is not activated.

42. The method of claim 40, wherein an indicator changes state when said switch is activated.

43. The method of claim 40, wherein an indicator changes state when said switch is not activated.

44. The method of claim 40, wherein a lamp is activated when said switch is activated.

45. The method of claim 40, wherein a lamp flashes when said switch is not activated.

46. The method of claim 39, further comprising changing the state of an indicator if said field strength is greater than said maximum field strength level.

47. The method of claim 39, further comprising changing the state of an indicator if said field strength is less than said minimum field strength level.

48. The method of claim 39, further comprising ceasing to apply said electromagnetic energy if said field strength is greater than said maximum field strength level.

49. The method of claim 39, further comprising ceasing to apply said electromagnetic energy if said field strength is less than said minimum field strength level.

50. A method for stimulating the proliferation of cells in tissue, said method comprising:

providing electromagnetic energy;

applying said electromagnetic energy to the tissue;

sensing said applied electromagnetic energy;

producing a response signal in response to said sensed electromagnetic energy; and

varying the applied electromagnetic energy as a function of said response signal.

51. The method of claim 50, wherein said sensing includes measuring the field strength of said applied electromagnetic energy.

52. The method of claim 51, wherein varying the applied electromagnetic energy includes ceasing to provide said electromagnetic energy if the field strength of said electromagnetic energy is greater than a maximum field strength level.

53. The method of claim 51, wherein varying the applied electromagnetic energy includes ceasing to provide said electromagnetic energy if the field strength of said electromagnetic energy is less than a minimum field strength level.